UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

NOV 22 2006

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Mr. Carl Palmer, Director
TD*X Associates, LP
148 South Dowlen Rd., PMB 700
Beaumont, TX 77707

Dear Mr. Palmer:

Under authority of the Toxic Substances Control Act (TSCA) Section 6(e)(1), the National Program Chemicals Division (NPCD) of the U.S. Environmental Protection Agency (EPA) grants TD*X Associates LP (TDX) an approval to demonstrate its mobile polychlorinated biphenyl (PCB) alternate thermal disposal method (Enclosure). By this approval, NPCD authorizes TDX to remove and dispose of PCBs from TSCA-regulated PCB-contaminated soil at the Freeman Bridge Road remediation site during a demonstration for a proposed nationwide PCB disposal approval. TDX shall operate its transportable Model 6042 Prototype Indirect Thermal Desorption Unit (TDU) to process PCBs solely at the 34 Freeman Bridge Road Site, Glenville, NY (FBR Site). This PCB Demonstration Test Approval is effective on December 11, 2006 and terminates on March 11, 2007. This is not a final approval to dispose of PCBs.

The FBR Site is located in a commercial and residential area in Glenville, NY covering 12 acres. Lyon's Ventures, Inc. is the current owner and runs a used office furniture supply business at the site. The New York State Department of Environmental Conservation (NYSDEC) plans to excavate and treat about 71,000 tons of contaminated soil, waste, and debris. Of this, about 21,250 tons is TSCA-regulated and to be treated by TDX.

The TDX PCB disposal demonstration shall consist of two separate phases: the shakedown phase and the demonstration test phase. During the shakedown phase, TDX intends to use clean material initially and progress to material containing greater than 50 ppm PCBs and also RCRA hazardous waste. For the shakedown period, TDX shall monitor the exhaust emissions every seven days. During the initial seven days of operations with PCB material, TDX must sample, identify and quantify all the emissions for Destruction and Removal Efficiency

(DRE) quantification of PCBs and, if applicable, Principal Organic Hazardous Constituents (POHCs), using EPA approved methods. This sampling and analysis after the first seven days of operations will be termed the Pre-Test. After the Pre-Test, TDX must monitor the PCB emissions for DREs in seven-day increments. During each seven-day increment, TDX shall demonstrate 99.9999% (six 9s DRE) removal of PCBs from the contaminated feedstock. Failure to demonstrate six 9s DRE shall result in cessation of all operations with PCB contaminated material containing 50 ppm or greater PCBs. However, TDX may continue operations with material containing less than 50 ppm PCBs. Within 5 days of failure to achieve six 9s DRE, TDX must present to EPA and NYSDEC operational information detailing the cause of failure and the procedure to remedy the situation. If TDX should fail to submit this information within five days, TDX must stop all operations immediately. After review and acceptance of TDX's presentation by EPA, TDX may then resume the shakedown phase. During any shakedown phase, PCBs removed from contaminated material may be collected and stored for use during the TSCA PCB Disposal Demonstration as spiking agent for the demonstration tests.

TDX shall complete three runs on the TDU during the PCB Disposal Demonstration tests. For the TDU, NPCD requires TDX to (a) sample exhaust emissions during all runs, (b) complete three runs with at least two runs at the highest PCB concentrations (approximately 2,000 ppm) to be demonstrated, and (c) two runs at the highest feed throughput estimated to be treated in full-scale operations (12 to 20 tons per hour).

TDX shall provide splits of representative samples of feedstock for analysis by NPCD from all runs during the demonstration phase. NPCD shall impose, as conditions in the nationwide permit, the types of PCB-containing material which can be treated, as well as PCB concentrations in the soil. These conditions will be based on operating conditions observed during the demonstration phase. Such operating conditions shall include, but not be limited to, waste-feed rate and waste-feed concentration.

TDX must begin a formal technical research and analysis effort, in conjunction with the shakedown and the demonstration, to develop a method to determine the breakthrough point for PCBs of the aqueous stream from the off-gas condensing system (summarized in Condition 6 of the Enclosure). The method must be capable of identifying PCBs downstream of the final filters at two levels, < 3 µg/L and ≤ 0.5 µg/L. The <3 µg/L PCB is the standard for discharge to treatment works or to navigable waters (40 CFR 761.79(b)(1)(ii)), and the ≤ 0.5 µg/L is the standard for unrestricted use (40 CFR 761.79(b)(1)(iii)). A schedule or a direct test method to determine the cycle for replacement of carbon from the carbon columns must be developed for inclusion in the final approval. The final approval shall specify options for discharging the aqueous effluent from the condensate products.

At the FBR Site, TDX shall discharge the aqueous effluent from the off-gas condensing system to the FBR on-site water treatment works. TDX shall use the treated water from the FBR on-site treatment works to quench and to moisten for dust deterrence. NYSDEC established a discharge requirement of < 0.30 µg/L PCB for effluent from remediation sites. TDX will be using the FBR treated water with PCB at < 0.3 µg/L, thus complying with TSCA standard of $\leq$ 0.5 µg/L PCB for unrestricted use and discharge to the environment.

After completing the PCB demonstration test phase, TDX may continue disposal operations with feed material containing less than 50 ppm PCBs. Based on the results of the demonstration test phase, EPA shall determine whether the TDX TDU thermal desorption unit meets the technical disposal requirements and poses no unreasonable risk of injury to health and the environment. Specifically, EPA must determine that the TDU is equivalent in destruction and removal efficiency to a TSCA PCB incinerator as defined in 40 CFR 761.70. TDX shall submit data to confirm that the TDU meets the standards for a PCB incinerator, as outlined in Condition 9 of this Approval. If TDX demonstrates that operating parameters of this unit meet the appropriate equivalency standards, prior to issuing a final nationwide PCB disposal approval, EPA may authorize a limited period of interim operation, summarized in Condition 10, until additional data is submitted and the final approval issued.

The TDX TDU process is described in detail in documents submitted to EPA for a TSCA PCB disposal demonstration and operating permit and entitled, "Permit Application for a Mobile PCB Treatment Unit: Model 6042 Prototype Thermal Desorption Unit;" TDX-06-001, TD*X Associates LP, 148 South Dowlen Rd. PMB 700, Beaumont TX; dated June 22, 2006.

EPA representatives and their contractor will be on-site during the demonstration phase to observe procedures and to verify the results of the runs. TDX shall perform at least three complete runs during the scheduled demonstration phase.

EPA may submit quality assurance (QA) samples, spiked with PCBs or Aroclor, to the laboratory designated by TDX to conduct chemical analyses of samples collected at the demonstration phase, or to other entities selected by TDX to conduct chemical analyses of samples from the demonstration phase. The PCB concentration of each sample must be determined using analytical instrumentation in the designated laboratory(s).

After the demonstration test phase, TDX will collect and assemble all test results into a Process Demonstration Test Report (format enclosed) which shall be submitted to the PCB Disposal Team, NPCD, for evaluation. When the evaluation is completed, and if the data are determined to be acceptable, EPA will issue to TDX a nationwide PCB disposal approval to treat soils containing PCBs.

TDX may claim any information submitted to be confidential business information in accordance with EPA regulations at 40 CFR 2.203(b). Such information must be clearly marked "Confidential," and TDX must also submit a sanitized version of the information when the claim of confidentiality is made. Failure to assert a claim of confidentiality shall constitute a waiver, and any information submitted may be released without prior notice to TDX.

The nationwide approval will contain financial assurance requirements similar to the requirements at 40 CFR Part 264 (Subpart H), applicable to the TDX TDU processing equipment and to the operating arena, but not applicable to the remediation site. TDX must file with NPCD documentation of compliance with these requirements prior to initiation of any commercial operations disposing of waste regulated under the Toxic Substances Control Act.

If you have any questions regarding this matter, please contact Hiroshi Dodohara at (202) 566-0507.

Sincerely,

Maria J. Doa, Ph.D.
Director
National Program Chemicals Division

Enclosures

cc: Dan Kraft
USEPA, Region 2

Jim Haklar
USEPA, Region 2

Jim Harrington
NYSDEC Albany

Enclosure

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Approval to Dispose of Polychlorinated Biphenyls (PCBs)

COMPANY

TD*X Associates LP
148 South Dowlen Rd., PMB 700
Beaumont, TX 77707

APPROVAL TYPE

Demonstration Test

EFFECTIVE DATE

December 11, 2006 through March 11, 2007.

AUTHORITY

This approval to perform a demonstration test for PCB disposal is issued pursuant to Section 6(e)(1) of the Toxic Substances Control Act of 1976, Public Law No. 94-469, and the Federal PCB Regulations, 40 CFR Part 761.60(e), (48 Federal Register, 13185, March 30, 1983).

CONDITIONS OF APPROVAL

1. Advance Notification: A thirty-day advance notification of the Demonstration Test must be provided to the EPA Regional Administrator and the State and local officials where the TD*X Associates LP (TDX) transportable Model 6042 Thermal Desorption Unit (TDU) will be used. This notice must include the exact site, date, and entity using the process, along with an estimate of the length of stay at the site. A copy of the notice shall be submitted to EPA Headquarters.

2. Feedstock Restrictions: The TDX TDU mobile unit shall be used to treat non-liquid PCBs. The quantity of PCBs to be processed will be limited to that required to complete the Shakedown period and the Demonstration Test, as described in Demonstration Test Plan submitted to the National Program Chemicals Division (NPCD) of the Office of Pollution Prevention and Toxics, dated June 22, 2006.

For the start-up phase (Shakedown), EPA limits the quantity of TSCA-regulated feed to 5000 tons estimated to be used during the four, seven-day increments of PCB Disposal operations. Each increment requires monitoring of PCBs and compliance to the six 9s DRE (99.9999% destruction and removal efficiency) prior to advancing to succeeding increments. Nominal feed rate is twelve tons per hour.

The PCBs accumulated from the desorption operation must be characterized as to type and level of PCBs and for the presence of dioxins prior to the demonstration. The PCBs must be sampled and analyzed by gas chromatography for PCBs in accordance with the TDX demonstration plan and procedures published by EPA:

"Guidelines for PCB Destruction Permit Applications and Demonstration Test Plans for PCB Incinerators," May 28, 1986;

"Quality Assurance and Quality Control Procedures for Demonstrating PCB Destruction in Filing for an EPA Disposal Permit," USEPA, June 28, 1983 (Draft);

"Recommended Analytical Requirements for PCB Data Generated On Site During Non-Thermal PCB Destruction Tests," USEPA, March 19, 1986 (Draft); and

"Interim Guidelines and Specifications for Preparing Quality Assurance Plans," QAMS-005/80, Office of Research and Development, USEPA, December 29, 1980.

Authorized EPA representatives must witness this demonstration and obtain appropriate split samples for verification of analytical results. TDX may conduct whatever additional sampling and analyses are necessary to characterize the waste feed and facilitate more efficient separation (i.e., moisture level, particle size distribution, total organic content).

TDX may dilute or add PCBs to the waste feed in order to achieve an appropriate PCB concentration for demonstration purposes.

3. EPA Laboratory Audit: EPA may provide samples of PCBs in test matrices in order to test the adequacy of analytical methods employed by TDX or its agent to monitor the TDU. EPA will inform TDX of the approximate range of PCB concentration and the identity of the test matrix, if such samples are provided. TDX or its agent must determine the concentration of the test material during the regular demonstration period and provide EPA with all chromatogram, calculations, and records regarding analysis. EPA personnel may observe all or any portion of the analytical procedures.

4. Process Restrictions: The TDX TDU mobile unit shall operate at the following conditions whenever PCBs are being treated:

a. The desorption unit must operate under a negative pressure.

b. The particulate emission rate shall be less than 0.08 grains/dscf and the HCl emissions shall be no greater than 4 lb/hr or if greater than 4 lb/hr, the removal rate shall be greater than 99%.

c. Process temperatures (i.e., desorption unit or dryer, product temperature, gas condensing system outlet, and exhaust gas) shall be measured and recorded.

d. Condensate water: During the first seven-day increment of shakedown operations,

the condensate water must be collected and analyzed for PCBs. Condensate water which exhibits 0.3 μg/L PCB or greater may not be used for moisturizing or de-dusting the product, and must be transferred to the FBR Site water treatment system. Analytical data for the condensate water must be recorded and available for agency review.

e. DRE calculations: TDX must sample the process vent during each of the seven-day increments and establish the DRE to be six 9s DRE prior to proceeding to the next seven-day increment.

f. Shakedown phase: During shakedown, TDX shall process and treat PCB-contaminated material in seven-day increments. During the first seven-day increment, TDX shall sample the exhaust gas for PCBs using the NIOSH 5503 process vent PCB monitoring method for determining DRE with greater sensitivity than required to demonstrate 99.9999%. After completing the treatment of the initial seven-day increment, TDX shall then cease all operation with soil containing 50 ppm PCBS and greater. Prior to continuing the Shakedown phase operations, TDX must show that the exhaust emission complies with the six 9s DRE. TDX may then proceed with the succeeding increments.

5. Exhaust Emissions Monitoring: Monitoring of the exhaust emission (process vent) shall be conducted only during sampling operations for the shakedown and demonstration test for the following parameters:

a. Oxygen, O_2 (continuous).
b Carbon monoxide, CO (continuous) during the PCB Disposal Demonstration.
c. Carbon dioxide, CO_2 (continuous)
d. Hydrochloric acid, HCl
   - Sample of the exhaust gas shall be collected and analyzed for HCl during the PCB Disposal Demonstration Test.
e. PCBs
   - Samples of the exhaust gas shall be collected and analyzed for PCBs during the shakedown period and during each run of the PCB Disposal Demonstration.
f. Total particulate matter
   - Samples of the exhaust gas shall be collected and analyzed during the PCB Disposal Demonstration Test.
g. PCDDs and PCDFs
   - Samples of the exhaust gas shall be collected and analyzed for PCDDs and PCDFs during each run of the PCB Disposal Demonstration. Analysis for the following, at a minimum, shall be performed:
     - 2,3,7,8-tetrachlorodibenzo-p-dioxin and 2,3,7,8-tetrachlorodibenzofurans;
     - total tetrachlorodibenzo-p-dioxin and tetrachloro-dibenzofuran;

- total polychlorodibenzodioxins and polychloro-dibenzofurans.

h. Volatile and semi-volatile organics
   - Sample of the exhaust gas shall be collected and analyzed for volatile and semi-volatile organics during the PCB Disposal Demonstration.

i. Shakedown vent sampling: During the first seven-day increment, TDX must establish that the TDU achieves six 9s DRE. During the four seven-day increments, TDX must sample the exhaust gas and analyze for PCBs. Methods appropriate to estimate the PCB DRE, such as NIOSH 5503 or ASTM D4861, shall be used. Data from sampling can be used to estimate the life of the carbon adsorption bed. TDX shall monitor and record the exhaust gas temperature.

j. Method 1A waiver: EPA Method 1A specifies 8 traverse points in the sampling of small exhaust stacks. EPA waives this requirement provided TDX installs an in-line mixer at the entrance to the four-inch monitoring duct, fitted to the I.D. of the duct.

6. Carbon Filter Monitoring:

a. Water Treatment Carbon Columns: During the demonstration, TDX must develop a method to detect breakthrough of liquid phase carbon columns, or must have a schedule of carbon replacement ensuring effective adsorption of PCBs .

b. TDX must begin a formal technical research and analysis effort, in conjunction with the shakedown and the demonstration, to develop a method to determine the breakthrough point for PCBs of the aqueous stream from the off-gas condensing system. The method must be capable of identifying PCBs downstream of the final filters at two levels, < 3 µg/L and ≤ 0.5 µg/L. The <3 µg/L PCB is the standard for discharge to treatment works or to navigable waters (40 CFR 761.79(b)(1)(ii)), and the ≤ 0.5 µg/L is the standard for unrestricted use (40 CFR 761.79(b)(1)(iii)). A schedule or a direct test method to determine the cycle for replacement of carbon from the carbon columns must be developed for inclusion in the final approval. The final approval shall specify options for discharging the aqueous effluent from the condensate products.

7. Process Waste Characterization: Filter media, liquid waste and any sludge from the gas handling system, from the off-gas system, and the water treatment system must be analyzed at a minimum for PCBs. All process solid waste exhibiting a level of PCB above 2 ppm chromatographic peak and aqueous waste above 3 ppb PCBs must be disposed of as if it contained the PCB level of the feedstock. Sampling of the solid and liquid wastes should be performed at the termination of the demonstration tests, or when the solid or liquid media is replaced or replenished, whichever occurs first.

8. Pollution Control Equipment: An induced draft system captures the gas discharge from the TDU, exposing the gas to a quench system and a filtration unit. The pollution-control system shall be operated whenever PCBs are being treated. TDX shall not dispose of the quench

effluent prior to analysis of fluid samples for PCBs. TDX must comply with all federal, state and local regulations.

Quench effluent exhibiting PCBs over 3 ppb per peak must be disposed of in an EPA-approved incinerator or an EPA-approved alternate treatment process.

9. Successful Trial Runs: TDU Process: A minimum of three successful trial runs must be completed. Successful trial run is defined as one in which operations were continuous without significant interruptions, and one in which sampling of the exhaust emission was representative and adequate to achieve removal of PCBs to a 99.9999% level in the exhaust emissions, and all "products" to be below 2 ppm PCBs for solids. However, treatment of PCB remediation waste that is going to be placed back on site must result in product containing less than 1 ppm PCB. TDX must demonstrate the capability to treat aqueous stream to below 0.5 ppb PCBs. PCB analysis showing Aroclor patterns shall be reported as total PCBs, otherwise, the results will be reported for individual PCB congener peaks.

10. Interim Operations: To continue operations after the PCB Disposal Demonstration Tests have been completed, EPA must determine that the TDX TDU thermal desorption unit imposes no unreasonable risk to the environment and to human health. Specifically, EPA must determine that the TDU is equivalent to a TSCA PCB incinerator as defined in 40 CFR 761.70. TDX shall submit data to confirm that the TDU meets the standards for a PCB incinerator according to the schedule below. When TDX can show parameters meet the appropriate criteria, EPA will authorize, in writing, an additional designated period of interim operation specified in the schedule until additional data is submitted successfully, as determined by the schedule below:

Phase	Parameters	Criteria	Authorized Duration of Interim Operations After Completion of Demonstration Tests	Cumulative Total Weeks of Interim Operations
Pre-Demonstration Data				
(1)	PCB Emissions	99.9999% DRE		
(2)	PCBs in treated soil	< 2 ppm		
	(TDX selected not to participate in this part of interim operation therefore, the TDX TDU must shut down at the FBR site after the PCB Disposal Demonstration until data specified in Condition 10(3) below is provided to USEPA verifying compliance to listed criteria.)			
PCB Demonstration Test Data				
(3)	PCB emissions HCl emissions	99.9999%DRE 4 lb/hr max.	two weeks	two weeks
(4)	PCDD TEF emissions PCBs in treated soil	< 0.2 ng/m^3 * < 2 ppm	four weeks	six weeks
(5)	Breakthrough testing for PCBs		two weeks	eight weeks

Phase	Parameters	Criteria	Authorized Duration of Interim Operations After Completion of Demonstration Tests	Cumulative Total Weeks of Interim Operations
Final Demonstration Test Report Must Confirm:				
(6)	PCB emissions	99.9999% DRE	until final permit is issued	
	HCl emissions	4 lb/hr maximum		
	PCDD TEF emissions	< 0.2 ng/m^3		
	PCBs in treated soil	< 2 ppm		
	Breakthrough testing for PCBs			

11. Secondary Containment Restrictions: If liquid PCBs are to be handled on site, a secondary containment system for the processing area shall be installed to ensure inadvertent releases of PCBs and PCB-contaminated hazardous waste into the environment do not occur. All fluids accumulating in the process area containment shall be sampled and analyzed for PCBs. The fluids must measure less than 3 µg/L PCBs) prior to discharge to a system meeting the National Pollution Discharge Elimination System (NPDES) or State Pollution Discharge Elimination System (SPDES). For discharge to the environment, the liquid must be less than 0.3 µg/L PCBs.

12. Recordkeeping and Operations Log: TDX shall collect and maintain, for a period of five years from the date of the demonstration, the following information:

A. Continuous and short-interval data described below:

1) Quantity of PCBs treated,

2) Exhaust emissions of oxygen;

B. Data and records on the monitoring of exhaust emissions as required by these conditions;

C. The total weight in kilograms of any solid residues generated by the treatment of PCBs during the demonstration, and the total weight in kilograms of any solid residues disposed of;

D. The name and address of each client whose PCB waste was processed by the TDU unit;

E. The type and amount of PCBs and other raw materials treated;

F. A copy of each gas chromatogram from the tests required by Condition 2;

G. The date(s), time and duration of the demonstration;

H. The name, address and telephone number of the operator and supervisor.

The documents must be compiled within 60 days following completion of the demonstration, must be kept at one centralized location, and must be available for inspection by authorized representatives of EPA upon request. TDX or its authorized agents must also maintain the records required by 40 CFR 761.180. If TDX or its agents terminate business, these records, or their copies must be submitted to the Director, National Program Chemicals Division, OPPT.

13. Process Failure: If the quality-control testing as described in the demonstration plan and the EPA guidelines reveal that the PCBs are not being adequately removed and destroyed, disposal activities may be ordered to cease until adequate explanation is given, and corrective measures are taken. A written report detailing the problem and solution shall be filed with the EPA within five business days.

14. PCB Releases: In the event TDX believes, or has reason to believe, that a release of PCBs has or might have occurred, the facility operator must inform the EPA immediately.

A written report describing the incident must be submitted by the close of business on the next regular business day. No PCBs may be processed in the facility until the release problem has been corrected to the satisfaction of the EPA.

15. PCB Spills: Any spill of PCBs or other oils shall be promptly controlled and cleaned up as provided in TDX's Spill Prevention, Control and Countermeasures Plan. In addition, a written report describing the spill, operations involved, and clean-up actions must be submitted to the EPA within five business days.

16. Facility Security and Safety: TDX must take all necessary precautionary measures to ensure that operation of the TDU is conducted in compliance with all applicable safety and health standards, as required by federal, state, or local regulations and ordinances. The test site shall be secured (e.g., fence, alarm system, etc.) to ensure that only those individuals participating in the demonstration and authorized visitors are allowed in the approved areas.

Any accident or personal injury occurring as a result of the TDU unit must be reported to the EPA by the next business day. A written report describing the accident must also be submitted within five business days.

17. Reporting Requirements: Any notification to EPA required by Conditions 11, 12, 13, 14 or 15 shall be submitted by telephone to the PCB Disposal Team (202-566-0500) within the time frame specified. In addition, TDX shall file a written report with the Director of the National Program Chemicals Division, MC 7404T, Office of Pollution Prevention and Toxics, 1200 Pennsylvania Avenue, NW, Washington, DC 20460, within the specified time frame.

18. PCB Off-Site Transport: PCB waste may not be transported off-site, except for proper disposal in accordance with 40 CFR 761 Subpart D. All PCBs not utilized in the test (e.g.,

spiking solutions) shall, upon completion of all testing, be disposed of in accordance with 40 CFR Part 761. PCB-contaminated equipment on the TDU unit may be transported off-site in accordance with the U.S. Department of Transportation (DOT) requirements of 49 CFR Part 172. Such requirements include placarding the TDU unit if the equipment is not decontaminated prior to leaving the site.

19. Severability: The conditions of this approval are severable, and if any provisions of this approval or any application of any provision is held invalid, the remainder of this approval shall not be affected thereby.

20. Other Approvals/Permits: No operation may commence until TDX has obtained all necessary approvals/permits from federal, state, and local agencies. TDX is responsible for obtaining such approvals/permits where appropriate.

21. Other Regulations: This approval to dispose of PCBs does not relieve TDX of the responsibility to comply with all applicable federal, state, and local regulations. Violation of any applicable federal regulations will be subject to enforcement action, which may include termination of this approval. This approval may be rescinded at any time for failure to comply with the terms and conditions herein, or for any other reasons which EPA deems necessary to protect public health and the environment.

22. Compliance Responsibility: TDX shall be responsible for any authorized TDX operator and shall assume full responsibility for any failure to comply with all applicable federal, state, and local regulations, including the conditions of this approval.

23. EPA Inspection: EPA reserves the right for its employees or agents to inspect and test TDX personnel, procedures, and equipment; and to terminate TDX PCB disposal activities at any time.

24. Deviation from Demonstration Plan: Any deviations from the conditions of this approval or the terms expressed in the application/demonstration test plan from TDX, must receive authorization by EPA. Verbal authorizations by on-site EPA representatives must be followed, within ten-working days, by a written modification to the demonstration plan. In this context, "demonstration plan" shall be defined as all data and materials which have been received by this Agency from TDX regarding the TDX TDU transportable process.

25. Demonstration Approval and Conditions: EPA reserves the right to impose additional conditions when it has reason to believe that the continued operation of the Indirect System unit presents an unreasonable risk to health, or the environment, or for any other valid cause.

Approval to conduct a disposal demonstration of PCBs is hereby granted to TD*X Associates LP of Beaumont, TX, subject to the findings and conditions expressed herein, and consistent with the materials and data included in the permit application and demonstration plan filed by TDX. This approval is valid for operations at the 34 Freeman Bridge Road Site in Glenville, New York.

11/22/06
Date

Maria J. Doa
Maria J. Doa, Ph. D.,
Director
National Program Chemicals Division

APPENDIX

BACKGROUND

TD*X Associates LP (TDX) of Beaumont, Texas, specializes in on-site removal and treatment of contaminated soil. To comply with Section 6(e) of the Toxic Substance Control Act (TSCA), TDX submitted the PCB Disposal Approval Application and Demonstration Plan pursuant to 40 CFR 761.60(e) for an alternative PCB disposal technology. TDX will demonstrate its Model 6042 Thermal Desorption Unit (TDU) for approval to dispose of PCBs. The TDX Permit Application (operating permit) and Demonstration Test Plans were submitted June 22, 2006.

TDX intends to demonstrate its TDU in the fall of 2006 at the Freeman Bridge Road Site in Glenville, New York.

FINDINGS

1. The TD*X Associates LP (TDX) Model 6042 Thermal Desorption Unit (TDU) is a transportable treatment unit to remove PCBs from contaminated material. Components of the TDU include the following:

a. Material feed system;
b. Indirectly heated dryer;
c. Materials discharge system;
d. Gas condensate recovery system;
e. Condensate oil-water separation system.

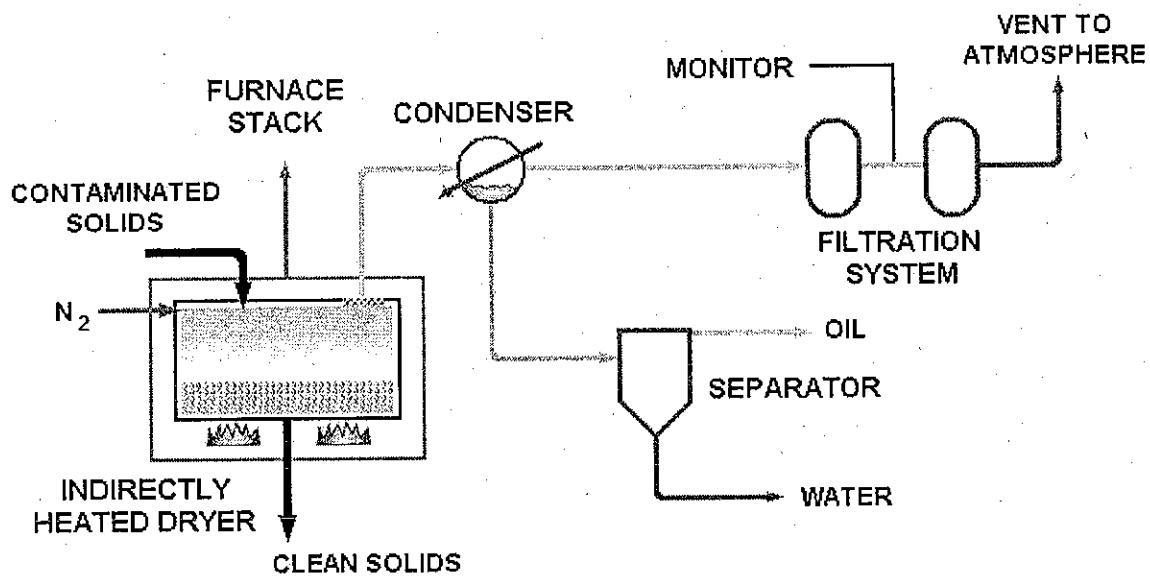

Figure 1. Model 6042 Thermal Desorption Unit

Process Description: The TDU is a mobile alternative PCB treatment system and is illustrated in Figure 1. The unit separates PCBs from soils, sludge, and similar solids and recovers them with a gas condensation system. The unit*s primary dryer is indirectly heated, with the PCB contaminated material inside its sealed steel cylinder, agitation system and the burners firing the external furnace. The combustion gas never touches the PCB waste and is discharged to atmosphere.

The liquid organic condensate contains the PCBs and other organic chemicals from the waste and will be disposed of at a separately permitted off-site facility, typically at a TSCA approved incinerator. The treated solids have less than 2 ppm residual PCBs and are released from regulation under TSCA. Remediation soil to be used as backfill must be treated to a level of one (1) ppm PCB. Prior to discharge, the off-gas passes through two carbon filters. Periodic sampling of the off-gas between the two carbon filters ensures the off-gas always flows through an active carbon filter.

2. EPA categorizes the TDX TDU an alternative PCB disposal technology. Specifically, the TDU is an alternate PCB thermal disposal process. Therefore, TDX must demonstrate the TDU to be equivalent to a PCB incinerator pursuant to 40 CFR 761.70. Incinerators meeting these criteria have been shown not to present an unreasonable risk to human health or the environment. The currently accepted performance level for EPA approved incinerators is 99.9999% destruction and removal efficiency (DRE) for PCBs.

3. Many of the TDU operating parameters are computer controlled. Should a malfunction occur, the TDU is designed to automatically shut down. Alternatively, some shutdown sequences may be initiated by manual activation.

4. Due to the design aspects, operating parameters, and safety measures, EPA finds that a demonstration of the TDX TDU system is equivalent to a demonstration of a 40 CFR 761.70 incinerator, and that the demonstration does not pose an unreasonable risk of injury to health or the environment.

5. PCDD/PCDD Emissions Criteria: The current level of 2,2',4,4'-TCDD TEQ emissions from full-scale incinerators is 0.2 ng/m^3. The TDX exhaust gas flow is at least two orders of magnitude smaller than a commercial incinerator, EPA believes it is appropriate to impose the PCDD/PCDD emission standard of 0.2 ng/m^3 on occasions when TDX diverts a portion of the TDU exhaust gas to the dryer burners for odor control and to combust the low molecular weight hydrocarbons, until separate standards for small incinerators are developed.

PROCESS TEST REPORT

The Process Test Report should be prepared in accordance with the specifications provided in the guidance document for PCB destruction permit applications and demonstration test plans. In order for the test report to be reviewed and accepted by the Agency, the applicant should include, at a minimum, the following items:

1. Certification letter. This letter, signed by an authorized official(s), must certify on behalf of the applicant that the test was carried out in accordance with the approved test plan and the results of all determinations are submitted in the report. Any changes or deviations by the applicant from the permit application and/or test plan must be documented and submitted in writing to the EPA.

2. Detailed discussion of all process operations, operational problems, if any, and corrective actions.

3. Chronology of significant events.

4. List of all visits/audits by State, local or EPA officials.

5. Quality Assurance report. This should address all the QA objectives, including whether or not precision and accuracy objectives were met, as well as results of quality control samples, performance audit samples and systems audits.

6. Waste handling. Applicant should provide documentation (copies of manifest) to show that all wastes generated during the process test were properly disposed according to Toxic Substances Control Act (TSCA) and Resource Conservation and Recovery Act (RCRA) regulations. Applicant should be aware that all the waste generated during the test should be disposed of [in accordance with the requirements established in the Lagoon and Project Site Cleanup contract provisions.]

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

NOV 22 2006

Mr. Carl Palmer, Director
TD*X Associates, LP
148 South Dowlen Rd., PMB 700
Beaumont, TX 77707

Dear Mr. Palmer:

Under authority of the Toxic Substances Control Act (TSCA) Section 6(e)(1), the National Program Chemicals Division (NPCD) of the U.S. Environmental Protection Agency (EPA) grants TD*X Associates LP (TDX) an approval to demonstrate its mobile polychlorinated biphenyl (PCB) alternate thermal disposal method (Enclosure). By this approval, NPCD authorizes TDX to remove and dispose of PCBs from TSCA-regulated PCB-contaminated soil at the Freeman Bridge Road remediation site during a demonstration for a proposed nationwide PCB disposal approval. TDX shall operate its transportable Model 6042 Prototype Indirect Thermal Desorption Unit (TDU) to process PCBs solely at the 34 Freeman Bridge Road Site, Glenville, NY (FBR Site). This PCB Demonstration Test Approval is effective on December 11, 2006 and terminates on March 11, 2007. This is not a final approval to dispose of PCBs.

The FBR Site is located in a commercial and residential area in Glenville, NY covering 12 acres. Lyon's Ventures, Inc. is the current owner and runs a used office furniture supply business at the site. The New York State Department of Environmental Conservation (NYSDEC) plans to excavate and treat about 71,000 tons of contaminated soil, waste, and debris. Of this, about 21,250 tons is TSCA-regulated and to be treated by TDX.

The TDX PCB disposal demonstration shall consist of two separate phases: the shakedown phase and the demonstration test phase. During the shakedown phase, TDX intends to use clean material initially and progress to material containing greater than 50 ppm PCBs and also RCRA hazardous waste. For the shakedown period, TDX shall monitor the exhaust emissions every seven days. During the initial seven days of operations with PCB material, TDX must sample, identify and quantify all the emissions for Destruction and Removal Efficiency

CONCURRENCES

SYMBOL	7404T	7404T	7404T					
SURNAME	McGuire	Dodd	[illegible]					
DATE	11-8-06	11-8-06	11/22/06					

(DRE) quantification of PCBs and, if applicable, Principal Organic Hazardous Constituents (POHCs), using EPA approved methods. This sampling and analysis after the first seven days of operations will be termed the Pre-Test. After the Pre-Test, TDX must monitor the PCB emissions for DREs in seven-day increments. During each seven-day increment, TDX shall demonstrate 99.9999% (six 9s DRE) removal of PCBs from the contaminated feedstock. Failure to demonstrate six 9s DRE shall result in cessation of all operations with PCB contaminated material containing 50 ppm or greater PCBs. However, TDX may continue operations with material containing less than 50 ppm PCBs. Within 5 days of failure to achieve six 9s DRE, TDX must present to EPA and NYSDEC operational information detailing the cause of failure and the procedure to remedy the situation. If TDX should fail to submit this information within five days, TDX must stop all operations immediately. After review and acceptance of TDX's presentation by EPA, TDX may then resume the shakedown phase. During any shakedown phase, PCBs removed from contaminated material may be collected and stored for use during the TSCA PCB Disposal Demonstration as spiking agent for the demonstration tests.

TDX shall complete three runs on the TDU during the PCB Disposal Demonstration tests. For the TDU, NPCD requires TDX to (a) sample exhaust emissions during all runs, (b) complete three runs with at least two runs at the highest PCB concentrations (approximately 2,000 ppm) to be demonstrated, and (c) two runs at the highest feed throughput estimated to be treated in full-scale operations (12 to 20 tons per hour).

TDX shall provide splits of representative samples of feedstock for analysis by NPCD from all runs during the demonstration phase. NPCD shall impose, as conditions in the nationwide permit, the types of PCB-containing material which can be treated, as well as PCB concentrations in the soil. These conditions will be based on operating conditions observed during the demonstration phase. Such operating conditions shall include, but not be limited to, waste-feed rate and waste-feed concentration.

TDX must begin a formal technical research and analysis effort, in conjunction with the shakedown and the demonstration, to develop a method to determine the breakthrough point for PCBs of the aqueous stream from the off-gas condensing system (summarized in Condition 6 of the Enclosure). The method must be capable of identifying PCBs downstream of the final filters at two levels, < 3 µg/L and ≤ 0.5 µg/L. The <3 µg/L PCB is the standard for discharge to treatment works or to navigable waters (40 CFR 761.79(b)(1)(ii)), and the ≤ 0.5 µg/L is the standard for unrestricted use (40 CFR 761.79(b)(1)(iii)). A schedule or a direct test method to determine the cycle for replacement of carbon from the carbon columns must be developed for inclusion in the final approval. The final approval shall specify options for discharging the aqueous effluent from the condensate products.

At the FBR Site, TDX shall discharge the aqueous effluent from the off-gas condensing system to the FBR on-site water treatment works. TDX shall use the treated water from the FBR on-site treatment works to quench and to moisten for dust deterrence. NYSDEC established a discharge requirement of < 0.30 µg/L PCB for effluent from remediation sites. TDX will be using the FBR treated water with PCB at < 0.3 µg/L, thus complying with TSCA standard of $\leq$ 0.5 µg/L PCB for unrestricted use and discharge to the environment.

After completing the PCB demonstration test phase, TDX may continue disposal operations with feed material containing less than 50 ppm PCBs. Based on the results of the demonstration test phase, EPA shall determine whether the TDX TDU thermal desorption unit meets the technical disposal requirements and poses no unreasonable risk of injury to health and the environment. Specifically, EPA must determine that the TDU is equivalent in destruction and removal efficiency to a TSCA PCB incinerator as defined in 40 CFR 761.70. TDX shall submit data to confirm that the TDU meets the standards for a PCB incinerator, as outlined in Condition 9 of this Approval. If TDX demonstrates that operating parameters of this unit meet the appropriate equivalency standards, prior to issuing a final nationwide PCB disposal approval, EPA may authorize a limited period of interim operation, summarized in Condition 10, until additional data is submitted and the final approval issued.

The TDX TDU process is described in detail in documents submitted to EPA for a TSCA PCB disposal demonstration and operating permit and entitled, "Permit Application for a Mobile PCB Treatment Unit: Model 6042 Prototype Thermal Desorption Unit;" TDX-06-001, TD*X Associates LP, 148 South Dowlen Rd. PMB 700, Beaumont TX; dated June 22, 2006.

EPA representatives and their contractor will be on-site during the demonstration phase to observe procedures and to verify the results of the runs. TDX shall perform at least three complete runs during the scheduled demonstration phase.

EPA may submit quality assurance (QA) samples, spiked with PCBs or Aroclor, to the laboratory designated by TDX to conduct chemical analyses of samples collected at the demonstration phase, or to other entities selected by TDX to conduct chemical analyses of samples from the demonstration phase. The PCB concentration of each sample must be determined using analytical instrumentation in the designated laboratory(s).

After the demonstration test phase, TDX will collect and assemble all test results into a Process Demonstration Test Report (format enclosed) which shall be submitted to the PCB Disposal Team, NPCD, for evaluation. When the evaluation is completed, and if the data are determined to be acceptable, EPA will issue to TDX a nationwide PCB disposal approval to treat soils containing PCBs.

TDX may claim any information submitted to be confidential business information in accordance with EPA regulations at 40 CFR 2.203(b). Such information must be clearly marked "Confidential," and TDX must also submit a sanitized version of the information when the claim of confidentiality is made. Failure to assert a claim of confidentiality shall constitute a waiver, and any information submitted may be released without prior notice to TDX.

The nationwide approval will contain financial assurance requirements similar to the requirements at 40 CFR Part 264 (Subpart H), applicable to the TDX TDU processing equipment and to the operating arena, but not applicable to the remediation site. TDX must file with NPCD documentation of compliance with these requirements prior to initiation of any commercial operations disposing of waste regulated under the Toxic Substances Control Act.

If you have any questions regarding this matter, please contact Hiroshi Dodohara at (202) 566-0507.

Sincerely,

Maria J. Doa, Ph.D.,
Director
National Program Chemicals Division

Enclosures

cc: Dan Kraft
USEPA, Region 2

Jim Haklar
USEPA, Region 2

Jim Harrington
NYSDEC Albany

TD*X Associates LP
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Beaumont, TX 77707
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FAX (509) 692-8791
E-mail: cpalmer@tdxassociates.com

June 22, 2006

United States Environmental Protection Agency
Director, National Program Chemicals Division
Attn: Maria Doa, PhD
1201 Constitution Avenue
Room 4355A
Washington, DC 20004

SUBJECT: Permit Application for a Mobile PCB Treatment Unit:
TD*X Model 6042 Prototype Indirect Thermal Desorption Unit

Dear Dr. Doa;

Enclosed is the original copy of the subject permit application. The application is complete including the Demonstration Test Plan (Appendix E). I have sent a second copy of this permit application directly to Mr. Hiroshi Dodohara of your staff. Appendix A, which contains confidential business information, is being transmitted under separate cover through the Document Center.

I have spoken with both Messers. Dan Kraft and Jim Haklar of USEPA Region 2, and they are aware of my request to your office and the proposed demonstration at a site in Region 2. They were very appreciative to have the request reviewed by Mr. Dodohara, given his depth of knowledge and experience in these matters.

We look forward to working with your staff on this important approval. I am the main contact at TD*X for this application. I can be reached in my office in RTP, or by mobile telephone at 919-349-1583.

Sincerely,

Carl R. Palmer
2006.06.22 02:14:20 -04'00'

Carl R. Palmer, P.E.
Director, Thermal Process Group

cp\CRP\0156

C:\Documents and Settings\Carl\My Documents\Docs\TechRpts\06-001_TDX_6042_TSCA_Permit\06-001.CoverLetter.frm

cc: → Hiroshi Dodohara Copy #2
Michael Cruden - NYSDEC Copy #3
TDU Field File Copy #4
TD*X File 0156 Copy #5
Jim Haklar

ROUTING SLIP

#	NAME	ACTION	INITIAL	DATE
1	Hiroshi Dodohara	Originator	HD	11-8-06
2	Sara McGurk	Concur	SM	11-8-06
3	Shiela Canavan	Concur		
4	Maria Doa	Sign	MD	11/22/06
5	Pat Robinson	Log		
6				
7				
8				
9				

Nature of Item Being Routed

PCB Disposal Demonstration Permit for TD*X Associates to demonstrate their prototype Model 6042 indirect thermal desorption hardware. The demonstration will take place at a New York State remediation site – 34 Freeman Bridge Road Site in Glenville, NY. NYSDEC and TDX are seeking continuation after the demonstration test using the Interim Operations feature, A tight schedule imposed on the prime contractor – D.A. Collins by NYSDEC necessitates continuation of operations. TDX will shut down for a week after the demonstration and expect to have the required analytical data to begin the Interim Operations a week after the Demo. Target date for signature is Friday ~~11/17/06~~. Start up operations should begin the first week in December. 11/24/06

Pat - after you date stamp, please make a copy of the package for my files. Thanks — MD

FROM:	DATE	TELE #	ROOM #
H. Dodohara	10/23/06	566-0507	EPA East 4353QQ